

position in the *Ledrinæ*. Stål evidently must have wrongly incorporated a note when he placed this species (*Hem. Afr.* iv. p. 246) as a synonym of his *Phleboterum præmorsum*, which he figured (*Öfv. Vet.-Ak. Förh.* 1856, p. 67, pl. i. fig. 8). Melichar has copied the error (*Ann. Hofmus. Wien*, xvii. p. 2, 1902).

XLIV.—*The Collections of William John Burchell, D.C.L., in the Hope Department, Oxford University Museum.*

IV. *On the Lepidoptera Rhopalocera collected by W. J. Burchell in Brazil, 1825-1830.* By E. G. JOSEPH, of Lincoln College, Oxford.

[Continued from ser. 8, vol. iii. p. 111.]

VII. *HELICONIINÆ.*

MR. J. C. MOULTON having left England in order to undertake the curatorship of the Sarawak Museum, I suggested to Mr. E. G. Joseph, of Lincoln College, Oxford, the preparation of an account of further groups of Burchell's Brazilian butterflies. To this Mr. Joseph readily assented, and, in the course of the work, I have had abundant opportunities of witnessing the great patience with which he has performed this laborious task and his success in doing justice to the wonderful accuracy and powers of observation of the illustrious naturalist.

E. B. POULTON.

The following paper forms the continuation of the valuable publications of Mr. J. C. Moulton on Burchell's Brazilian *Nymphaliniæ* and of Miss Cora B. Sanders on the earlier subfamilies.

In the nomenclature and succession of the species of *Heliconiiniæ* I have followed Stichel's monograph in Wytsman's 'Genera Insectorum'¹, and have only departed from his arrangement by splitting up *Heliconius nanna* into two subspecies.

The whole of the *Heliconiiniæ* in the Hope Department have been worked out and arranged, according to Stichel's monograph, by Mr. W. J. Kaye, F.E.S. I owe a deep debt

¹ 37th Fascicule of the 'Genera Insectorum,' edited by P. Wytsman. *Lepidoptera, Rhopalocera: Fam. Nymphalidæ, Subfam. Heliconiiniæ*, 1906.

of gratitude to this distinguished authority on the group, not only for the specific determinations, many of which are of great difficulty, but also for kind help and advice on special points which arose in the course of the work.

The arrangement of numbers and dates is explained in detail in *Ann. & Mag. Nat. Hist.* ser. 7, vol. xiii. (April 1904), pp. 309, 310. A further explanatory statement is quoted from ser. 8, vol. i. p. 34:—"Notes, other than numbers and dates, written on labels attached to the specimens are placed between inverted commas immediately after the numbers in heavy type, and immediately before the locality." "When a specimen bears a number only, the date, recovered from Burchell's note-book, is placed between square brackets. 'a.' and 'p.' associated with the date stand for 'A.M.' and 'P.M.'"

The geographical data and notes as to the character of certain localities are in many cases more complete and detailed in the following paper than in any of the preceding. This is a result of the study of the earlier manuscript volumes of Burchell's *Catalogue of Brazilian Plants*, containing the numbers 701-5336. Quotations from this source are distinguished by a terminal asterisk, thus *. About half of the catalogue of Brazilian plants has thus been studied and the data copied, viz. from April 2nd, 1825, when Burchell set foot in Portugal on his way to Brazil, up to August 23rd, 1827, when he was near the Rio Pardo on the journey from S. Paulo to Goyaz. These volumes, now in the library at Kew, have been kindly lent to Professor Poulton, at first by Sir William Thiselton Dyer, F.R.S., and later by Colonel D. Prain, F.R.S. Professor Poulton hopes that the whole of the data from this source will be transcribed at no distant date and made available for future papers.

Professor Westwood's labels, whenever they have been found attached to the specimens, are quoted in full. The words "a Westwood's label" of course always imply that he was the writer. "Westwood's list," on the other hand, is the list prepared under his direction, and, in the great majority of groups, written by an assistant. The condition of this list, as regards the subfamily now under consideration, is set forth in the two following paragraphs.

Burchell's species of the genus *Heliconius*, together with a single *Eueides*, were included by Westwood in his list of "Heliconiæ," described as follows in *Ann. & Mag. Nat. Hist.* ser. 7, vol. xiii., April 1904, p. 306:—"The first section of the butterflies is written in Professor Westwood's own handwriting, and deals with the Heliconiidae in the old

broad sense, comprising the Ithomiinæ, the genera *Lycorea* and *Ituna* of the Danainæ, and the Heliconiinæ. Although in the form of rough notes and very difficult to disentangle, it is a model of accuracy. It records the whole of Burchell's notes written on the labels accompanying the specimens, but apparently none of the facts to be found in his manuscript note-books." Numbers are not assigned to the species, as they are in the lists written by an assistant. Westwood's brief accurate descriptions seize upon the characteristic points and frequently enable us to identify the individual specimens. Good examples of this are to be found in 1296-1300.

With the single exception of *Eueides tales pythagoras*, the species of the Heliconiine genus *Eueides* are included in Westwood's list of "Burchell's *Acræa* &c." The numbers and data in this list are written in a clerk's handwriting, the names or notes being inserted by Westwood himself. The data of *Eueides aliphera aliphera* and *E. lybia lybia*—the former very imperfectly copied into the above list—were also completely recorded by Westwood on a separate slip of paper. In the case of *E. tales pythagoras* Westwood was evidently at first misled by the mimetic resemblance, for he separated this species from its genus and placed it beside the *Heliconius* models in the list of "Heliconidæ." He ultimately recognized its true relationship and added the correct name.

E. G. JOSEPH.

Oxford, Dec. 4, 1909.

HELICONIINÆ.

1. Genus. HELICONIUS, Linné.

Section I. OPISOGYMNÆ.

Cohort i. SILVANIFORMES.

Heliconius narcea narcea, Godt.

Bz. 580. I. [21. 10. 25]. = 1284. Minas Geraes. "Pap[ilio]. In a rossa at Discoberto, and along a channel (on the margin of the forest) which conducts water to the house." Burchell's manuscript catalogue of Brazilian plants records that he collected botanical specimens "on an Excursion into the Province of Minas Geræes, between 7th October 1825, and 15 Nov^r 1825." This Catalogue, which exists in the Kew library, will be hereafter quoted as "Cat. pl. Braz. MSS.," while passages extracted from it will be indicated by an asterisk, thus *.

29. 10. 25. = 1285. Minas Geraes. "In the forest on the

S.E. side of S. João de Nēpomucéna." Burchell's Cat. pl. Braz. MSS. gives the following general account of his travels between Oct. 27 and Nov. 14, 1825:—"In the Province of Minas Geráes on the Road between Porto d'Estrélla & the Descobérto do Rio Novo. From 27 October to 14 November 1825."*

According to Westwood's labels on **1290** and also according to his list, the date 29. 10. 25 was borne by an example of "*Hel. Eucrate* V[ar]"¹. The Burchell specimen **1285**, which now bears this date, agrees, however, in every particular with individuals identified by Westwood as belonging to the type form of the species. It is probable, considering the remarkable accuracy of this distinguished naturalist, that labels have been accidentally displaced, and that **1285** originally bore the date 30. 10. 25, shown by Westwood's list as well as by his label on **1287** to have been attached to an example of the type form. The transpositions which may have occurred are suggested under **1294**.

7. 11. 25. = **1286**. Minas Geraes. "Between [Captain] Amaro Leite's and Pillão, a fazenda"*. (See **1285**.) On Nov. 6th, at Capt. Leite's, Burchell noted, "The Comet clear and tail long"*; and at Pillão, on the following night, "The Comet very bright"*

Professor H. H. Turner, F.R.S., kindly informs me that the comet referred to was "probably that denoted 1825 iv, discovered by Biela on July 19, 1825, and by Pons on July 15. It was visible for 12 months in all and was 'very conspicuous early in October' with a bifid tail 15° long. An elliptic orbit assigned, period 4386 years."

8. 2. 26. = **1287**. Organ Mtns. "In a ride Northward to the Mule- and to the Cow-Curráls and to the Horse Currel and Milho Roça"*. Less detailed data have hitherto been given from the Geographical Catalogue.

A Westwood's label reads "Capt. No. 580; 30. 10. 25; 8. 2. 26; 7. 3. 26; 19. 3. 26." Westwood's list agrees with this label.

7. 3. 26. 2 = **1288, 1289**. Rio de Janeiro. "At Catombí." Bz. 9. 3. 26. = **1290**. Rio de Janeiro.

A Westwood's label reads: "Capt. 29. 10. 25; 7. 11. 25; 7. 3. 26; 9. 3. 26 (2 inds.); 13. 3. 26; 21. 3. 26 (2 inds.); 1. 4. 26." Another Westwood's label bears the name "*Hel. Eucrate* V." Westwood's list agrees with these two labels, and, like the first, records an additional specimen with the date 9. 3. 26, and another with 21. 3. 26.

¹ Hübner's *eucrate* is a synonym of *nurceæ*, Godt.

Bz. 13. 3. 26. = 1291. Rio de Janeiro.

19. 3. 26. = 1292. Rio de Janeiro. "In the valley of Catombí." A Westwood's label reads, "*Heliconia Eucrate* [*Isabellina*]¹." The parentheses are Westwood's.

21. 3. 26. = 1293. Rio de Janeiro. "Along the Carioca Aqueduct."

Westwood's list records one other specimen of this date.

10. 12. 29. = 1294. Pará. Data erroneous.

This date is omitted from Westwood's list and from his labels on 1287 and 1290. It is erroneous, not only on the evidence of Westwood's records, but because the date indicates a locality considerably to the north of that in which all the other captures of this species were made by Burchell, as well as to the north of the locality (South Brazil) given by Stichel².

In attempting to reconstruct Burchell's original labelling, assistance may be derived from 104, a specimen of *Mechanitis polymnia*, now bearing the date 30. 10. 25, indicating a locality considerably to the south of that in which the other individuals of this species were captured. Reasons were given in Ann. & Mag. Nat. Hist., April 1904, p. 320, for believing this label to be probably erroneous, and it was, moreover, suggested that the date on one of the additional specimens of *M. polymnia*, recorded by Westwood, viz. 3. 3. 28 or 10. 12. 29, was originally borne by 104. Now the latter of these dates is at present erroneously borne by the *Heliconius* 1294, to which it may have been accidentally transferred from 104. If we furthermore suppose that 1285 (type form) bore the date 30. 10. 25, now on 104, and 1294 (variety) bore 29. 10. 25, now on 1285, the labelling of these three specimens would agree with Westwood's records and with the probable localities of both *Heliconius* and *Mechanitis*.

Westwood's list and labels on 1287 and 1290 give the following dates not now to be found on any existing specimen of *H. narceæ*:—30. 10. 25, Minas Geraes (see above); 1. 4. 26, Rio. Two other additional specimens are referred to under 1290.

Opposite to the data "No. 580; 30. 10. 25; 8. 2. 26; 7. 3. 26; 19. 3. 26," Westwood had written in the list: "*Heliconia Eucrate* (*Isabellina*): al. ant^s. dimid^o. basali fulvo fascia obliqua nigra ad apicem cellulæ—macula subapicali alba." Similarly opposite to the data "29. 10. 25; 7. 11. 25;

¹ H. W. Bates's *isabellinus* is placed by Stichel as a subspecies of *numatus*, Cram., allied to *narceæ*.

² Bahia and Espirito Santo are the actual localities in S. Brazil cited by Stichel.

7. 3. 26; 9. 3. 26. 2 ind^s.; 13. 3. 26; 21. 3. 26. 2 ind^s.; 1. 4. 26," he had written: "EjUSD. var. (*Eucrate*) fascia media interrupta maculari. 9 ind^s." Nine of the fourteen Burchell specimens were thus separated as a variety, but, as pointed out under 1285 and 1294, the first date, "29. 10. 25," is now borne by an example of the type form, having been accidentally transferred since the time when Westwood's list was prepared. It is worth remarking that Westwood drew attention to the fact that one individual of the type form and one of the variety were caught on the same day, 7. 3. 26, by connecting the two copies of this date with a line.

Heliconius narcea polychrous, Feld.

a. 29. 8. 27. = 1295. Between R. Pardo and R. Grande. "Cérvo to Paciência." "In the forest ascending the Morro de Batataes. *Papilionides*. In this forest Butterflies literally swarmed and thousands might have been caught in one day. I never saw such abundance in my life before."

A Westwood's label reads, "*Heliconia polychrous* Felder Pl. 47 f. 7." ["Lepidoptera of the Novara Expedition. Plates. (Reise der Oesterreichischen Fregatte Novara). Vienna. 1864-1867."]

Westwood's list agrees; and the following description is written opposite to the date of this specimen: "*Heliconia Polychrous* Felder: ant^s. alis intra cellulam flavo nec fulvorofo variegatis."

[It is to be observed that, although Burchell captured this single specimen of *polychrous* rather to the north of the localities in which he took *narcea*, Stichel gives S. Brazil for both forms, and there is no doubt that they fly together over a wide area. Hence, according to the reasonable principles of Rothschild and Jordan, they should be considered as distinct species and not as subspecies.—E. B. P.]

Heliconius numatus superioris, Butl., var.

Bz. 4. 12. 28. ♀ = 1296. Porto Real. "Walk to the Igarapé." "*Papiliones*, caught in the woody campo; but the long-wing[ed] one is only found in forests in the shade."

It is exceedingly probable that the above-quoted description refers to this specimen (see 877, Ann. & Mag. Nat. Hist. ser. 8, vol. iii., Jan. 1909, p. 10). The "4" of Burchell's Bz. label is partly torn away; but there is no real doubt about the figure, which Westwood also read as a "4."

Burchell's specimen (1296) departs from the pattern of *numatus superioris* as represented by Stichel in Wytsman's 'Genera,' p. 7, fig. 2, in the fact that the three subapical yellow spots, characteristic of the fore wing upper surface, are evanescent, although just visible. The faint indications of two additional pale spots nearer the apex can also be made out on the fore wing of 1296. These spots, which are more distinct and white on the under surface, resemble those figured in the var. *geminata* (Stichel, *l. c.* p. 7, fig. 3).

Westwood's list agrees: but he united this specimen and *Hel. ethilla numismaticus*¹ under one species, *Hel. numata* (see 1299). Opposite to the list of dates he wrote, "*Heliconia Numata*: maculis 3 flavis ad apicem alar. antic^m.: mac. marg. al. post. flavis."—Moreover, between the "3" and "flavis" he drew a diagrammatic representation of the three yellow spots. The patterns of the three individuals placed under *numata* by Westwood (1296, 1299, and 1300) are remarkably similar,—least so in the case of 1299, which he thought was perhaps a variety of this species. See also the observations made under 1299.

Heliconius silvana silvana, Cram.

15. 11. 29. = 1297. Pará. S. José. "Caminho de Chamónte." A Westwood's label reads, "*Hel. Sylvana*."

Westwood's list agrees, and the following description is written opposite to the date of this specimen: "*Heliconia Sylvana*: alis ant^s. ultra cellulam fasc. 2 macularibus flavis."

Heliconius silvana robigus, Weym.

21. 3. 26. = 1298. Rio de Janeiro. "Along the Carioca Aqueduct." A Westwood's label reads, "*Sylvana* prop. Mac. 1 alba."

By the last words Westwood undoubtedly refers to the large, conspicuous submarginal spot of the hind wing, which is also the first counting from the costa. This spot is, however, yellow and not white on the upper surface, as Westwood clearly pointed out when he described the same specimen (1298) in his list, writing opposite to the date 21. 3. 26:—"*Hel. Sylvana proximo*: alis ant^s. ultra cell. fascia subapicali flava: al. p. puncto unico flavo anguli externi." There is, in fact, no white marking on the upper surface of 1298, but, on the under surface, the corresponding spot is white. It is

¹ In Stichel's classification, which is here followed, *numatus* is separated from *ethilla* by *silvana*.

of course possible that Westwood was referring to the under surface in his label attached to the specimen, but it seems on the whole more probable that "alba" was inadvertently written instead of "flava." There can be no doubt that the words of the label and the list refer to the same specimen, viz. 1298.

Heliconius ethilla numismaticus, Weym.

29. 7. 29. = 1299. Pará.

Westwood, in his list, described this specimen as varying from the typical "*Hel. Numata*," and wrote opposite to it: "Ejusd. [i. e. *Hel. Numata*] var. ??: fascia obliqua nigra al. ant. ante fasc. flavam, maculisq. marg. alar. post. subtus flavis nec albis."

Westwood's description is, as is nearly always the case, absolutely correct, and affords convincing evidence that there has been no accidental transference of data. This conclusion not only holds for 1299, but for all five *silvana*-like specimens, 1296-1300, which Westwood grouped in a manner very different from that here adopted from Stichel. No part of this difference is to be explained by subsequent accidental transposition of Burchell's labels.

18. 12. 29. = 1300. "in sylvis umbrosis." Pará. "Rivulet above Arsenal." A Westwood's label reads, "*Hel. Numata*."

Westwood's list agrees: for his description of this specimen see 1296.

Cohort iii. MELPOMENEFORMES.

Heliconius melpomene thelxiope, Hübn.

Bz. + 2. 20 p. 22. 5. 29. = 1301. Rio Tocantins. Just S. of, and the day before reaching, the Itabóca cataract.
7. 6. 29. 2 = 1302, 1303. On the Rio Tocantins, just above (S.W. of) Pará. "Sta. Anna."

The large yellow and somewhat constricted spot towards the end of the cell in the fore wing of this subspecies is much reduced and divided at the constriction into two spots in 1302, and is altogether absent from 1303.

Westwood also noted the condition of this feature in 1302 and 1303, as is shown by the following description written opposite to their dates in his list:—"Thelxiope var. [1303] var. ult^a. precedentis [i. e. of the typical '*H. Thelxiope*'] mac. in cellula al. ant. oblitterata." "*Thelxiope* var. [1302] simillima [to 1303] sed macula parva bipartita flava in cellula

al. ant." He also described the first specimen [1303] thus: "Al. ant. absq. mac. flav. in cellula. 1 [individual]"; and noted that these varieties were "both taken on same day,"—7. 6. 29. Westwood does not record these two specimens on his label, probably because of their variability from the type. (See 1312.)

18. 6. 29. 2 = 1304, 1305. Pará.

A Westwood's label on 1304 reads "*Heliconia Thelxiope* Hubn. S. Ex. Sch. pl. 12. and Var without detached spot." Plate 12 is in vol. i. of J. Hübner's 'Sammlung exotischer Schmetterlinge,' Augsburg, 1806.

The detached spot between the first and second median nervules of the fore wing is absent from 1305, but not from 1301-4; its absence or abnormally small size will be noted in each case under the corresponding number.

Bz. + 18. 6. 29. = 1306. Pará.

Detached spot absent except for a minute trace. Westwood's list records one other specimen of this date.

20. 6. 29. = 1307. Pará.

1. 7. 29. 2 = 1308, 1309. Pará. "Walk to the Caza de Pao."

The detached spot is small on the left side, and exists only as a minute point on the right of 1308. It is altogether absent from 1309. An additional small yellow spot occurs in the centre of the fore wing cell of 1308. A Westwood's label on 1309 reads "*Helic. Thelxiope*."

Westwood's list refers in the following note to the fact that two individuals of this species and two of *H. erato amazona* were caught on the same day:—"so that 2 ind^s. of this and 2 of the precedg. (♂ & ♀) were taken on same day 1. 7. 29." There can be little doubt that this note was intended to draw attention to the coincidence in habits between two species that were considered until quite recently to be very closely allied.

4. 7. 29. = 1310. Pará. Detached spot absent. Westwood had removed and mounted on a card, affixed to the pin, one of the anterior legs of this specimen.

12. 7. 29. = 1311. Pará. Westwood's label bears "♀."

29. 7. 29. = 1312. Pará. A Westwood's label reads, "Capt. 22. 5. 29; 18. 6. 29 (4 ind^s.); 20. 6. 29; 1. 7. 29 (2 ind^s.); 4. 7. 29; 12. 7. 29; 29. 7. 29 (2 ind^s.); 8. 12. 29."

Westwood's list records all the dates mentioned on this label, and similarly includes one other specimen with the date 29. 7. 29. The list includes in addition and describes

under "*H. Thelxiope* var." the two specimens caught on 7. 6. 29. (See 1302-3.)

8. 12. 29. = 1313. "In sylv." Pará.

Westwood's list agrees except for the differences above alluded to. Opposite to the list of dates he wrote: "*Helic. The[?]xiope*: alis post. fasc. obliqua fusca ad marg. anal. extensa ♂ & ♀." In the same place he thus describes a variation of the above: "*Thelxiope* variat. macula postica oblitterata." It is evident that by "macula postica oblitterata" Westwood referred to the "Var. without detached spot" mentioned under 1304.

Heliconius nanna nanna, Stich.

Heliconius nanna of Stichel (*l. c.*), but here distinguished from the following subspecies, *H. nanna burchelli*.

6. 12. 25. ♂ = 1314. Rio de Janeiro. "On the Corcovado Mountain." "In an excursion to the Summit of the Corcovado by the road by the Convent of S^{ta}. Theresa and along the Aqueduct." The Cat. pl. Braz. MSS. contains the following full account of the localities in which Burchell collected, Dec. 6th, 1825 (the catalogue numbers of the botanical specimens are omitted): "On the Corcovado Mountain. On the Summit, and in the Forest which clothes the highest part of the Mountain . . . Along the more open part of the road, from the forests to the head of the Aqueduct . . . Along the upper end of the Aqueduct, as far as the spot where the road crosses it to the northern side, and where the collection of 15. 9. 25 ended . . ."*

There is no trace of a yellow spot at the end of or above the fore wing cell.

Heliconius nanna burchelli, Poulton¹.

2. 3. 29. ♂ = 1315. Porto Real. The male type of the subspecies. "*Papilio*. The brown winged (*Horta*) with a red patch on the upper wings, is always found

¹ [*Heliconius nanna burchelli*, subsp. n. When studying Burchell's *Heliconiinae* with the author of this memoir, I observed that the single specimen (1314) of *H. nanna*, Stich., from Rio, where Burchell took large numbers of *H. erato phyllis*, differed from the five individuals (1315-1319) taken by him to the north-west of the area in which he captured the species last named.

In the single specimen of *nanna* from Rio, the lower hind marginal border of the oblique red bar, forming the most conspicuous feature of the fore wing upper surface, is produced into two well-marked projections or

in shady woods and forests. I have seen it in similar situations in every part of Brazil I have visited."

The yellow spot above the end of the fore wing cell is very distinct in this specimen.

In the above quotation from the Brazilian note-book, the description of "the brown winged (*Horta*)" applies not only to *Hel. nanna*, but also to *Hel. erato phyllis*, which latter Burchell collected in large numbers in Rio de Janeiro and its vicinity (see 1356-1409 A). Although these two species belong to different sections of the Heliconiinae, and are only distantly related, their superficial likeness to each other is so striking and their habits are evidently so essentially similar that Burchell, who was an extraordinarily acute observer, considered them to be a single species, widely distributed throughout the parts of Brazil visited by him. Until the

teeth, much resembling the form of the same marking in *erato phyllis*. Above the outer projection there is to be seen, on the external border of the bar, another minute tooth, resembling the step-like break which is more or less developed at the corresponding point in the bar of *erato phyllis*.

In all five individuals taken outside the area in which Burchell captured *erato phyllis*, the margin of the bar has a very different appearance, the tooth-like form being wanting, or, in the case of the lowest point, represented by a shortened and more rounded projection. The margin is in this respect very similar in all five specimens. Furthermore, in four individuals out of the five, a yellow spot, lying between the costa and the distal end of the fore wing cell, is more or less distinct. This spot is wanting from the Rio specimen (1314), although present in some of the fifteen individuals on which Riffarth's description is based (Berliner ent. Zeit. 1901-2, vol. xlv. p. 106).

Mr. W. J. Kaye has kindly allowed me to examine three specimens of *H. nanna* from his collection, and I find that they are consistent with Burchell's. Two (a female from Rio and a male from Espirito Santo) resemble 1314: one (a female from V. Nivac, Matto Grosso: Nov. 1904) resembles 1315-1319. The latter possesses the yellow spot, and the "teeth" are even more rounded off or flattened down than in Burchell's specimens.

Mr. Guy A. K. Marshall, who kindly examined the material in the British Museum for me, finds that two specimens of *H. nanna* from Pernambuco and two from Itaparica (an island off Bahia) resemble 1314, while one, in the Godman-Salvin Collection, from Chapada, is of the other form. Specimens of *H. erato phyllis* exist in the British Museum or Godman-Salvin collections from Bahia, Pernambuco, and still further north.

There is no doubt that Stichel's *nanna* is the form with the toothed bar from the area of *H. erato phyllis*. I have not been able to consult the original description (Ent. Zeit. Guben. vol. xii. p. 143), but, in his monograph in the 'Genera Insectorum,' Stichel gives South Brazil as the range, and Espirito Santo and Minas Geraes as localities. He furthermore indicates that the *nomen nudum* "*bidentatus*" of Staudinger's lists,

last few years the two species have never been distinguished by any systematist, and they are still unseparated in every collection that has failed to take into account the researches of Riffarth and Stichel. The remarkable character of the resemblance will be realized when it is remembered that Westwood, having before him the whole series of 69 Burchell specimens (including 6 *H. nanna*), wrote on a label affixed to 1395,—“69 individuals in full of this species without any variation of the least importance taken betⁿ. 24. 10. 25 & 24. 3. 29. See list in my Burchell Catalogue.”

[In attempting to understand Burchell's use of the name “*horta*” it is important to ascertain the various forms to which he applied it. These are as follows:—

- (1) True *Heliconiinae*, such as *H. nanna* and *H. erato phyllis* (see 1315);
- (2) The *Ithomiinae*, *Mechanitis lysimnia* or *Ceratinia delta*

applies to *H. nanna*. The toothed bar of *H. nanna* is also carefully described by Riffarth (in *Berliner ent. Zeit.* 1901-2, vol. xlvii. p. 106), and by Stichel and Riffarth in ‘*Tierreich*,’ vol. xxii. p. 134 (Berlin, 1905).

I therefore suggest the name *burchelli* for the subspecies in which the lower end of the red bar crossing the fore wing is not toothed or bears only a trace of the lower tooth. This subspecies is found over an area of unknown extent lying to the north and west of the Brazilian range of *H. nanna nanna* and *H. erato phyllis*.

♂ type from Porto Real (Nacional) on the R. Tocantins: captured Mch. 2, 1829, by W. J. Burchell: (1315) in Hope Department, Oxford University Museum.

♀ type from Villa Nivac, S.E. of Matto Grosso (Nov. 1904), in coll. W. J. Kaye.

H. nanna burchelli appears, as Mr. W. J. Kaye has suggested to me, to be a form of *H. melpomene amandus*, Grose-Smith and Kirby, from Bolivia and Peru. Mr. Kaye has kindly given me the opportunity of examining two males of this species from the Mapiri R., E. Bolivia. Both of these possess the yellow spot usually found over the end of the fore wing cell in *H. nanna burchelli* and sometimes in *nanna nanna*. The only essential difference between the two forms is due to the loss in *burchelli* of nearly the whole of the red area within the fore wing cell of *melpomene amandus* and the distal lengthening in the former of the yellow hind wing band of the latter. Another closely related form is, as Mr. Guy Marshall suggested to me, *H. amaryllis rosina*, Boisd., from Colombia, Panama, and Costa Rica. This subspecies is, however, without the longitudinal yellow streak which is so conspicuous a feature in the basal half of the fore wing of *melpomene amandus* and the forms of *nanna*.

It is probable that all the forms mentioned in the preceding paragraph will prove to be subspecifically related, *melpomene amandus* bearing this relationship to *amaryllis rosina* in the north and to *nanna burchelli* in the east. However this may be, there can be no doubt that *nanna nanna* is a geographical race of *burchelli*, produced to the east and south of the latter, under the influence of *H. erato phyllis*.—E. B. P.]

(see note on 108 and 97, Ann. & Mag. Nat. Hist. ser. 7, vol. xiii., April 1904, pp. 321 & 319 respectively);

(3) The Ithomiinæ with transparent wings, such as *Pteronymia euritea*, *Pteronymia hemixanthe*, and *Heteroscoda yanetta*, as the following note, in the Cat. pl. Braz. MSS. 701-3461, shows:—"1287. Ex Liatrideis. Planta herbacea erecta 5-ped. floribus albis. Hanc quoque vidi in Minas Geraës copiosè, ubi frequentatur a variis Papilionibus ex genere *P. Hortæ*, alis diaphanis."* We also find under the date Feb. 24, 1826, when Burchell was collecting "Between the foot of the [Organ] Mountains and Frechal," the following entry:—"2577. Syngenesia. Flores albi . . . Delectus papilionum variarum, sed praesertim ex genere *P. hortæ*."* The name "*Horta*" occurs in reference to 39, and the white-flowered *Liatridea* under 36¹, but the above more detailed descriptions from the Cat. pl. Braz. had not been found when the account of these early numbers, 36, 39, &c. was prepared for publication.

(4) The abundant South-African *Acræa hortæ*, Linn., captured in large numbers by Burchell. There are now in the Hope Department at least 15 specimens taken by him, Jan. 1, 1815, at the Buffeljaght's River, near Swellendam.

On his return home Burchell named his African collection by comparison with the Banksian cabinet, then in the rooms of the Linnean Society, now at the British Natural History Museum. His notes exist at Oxford, and show that he obtained from this source the name "*P. Hortæ*" for the common S. African *Acræa*. The manuscript bears the following interesting heading:—

"The following notes are the result of a collation of the whole of my African collection of insects, with the Banksian Cabinet (now belonging to the Linnæan Society) the greatest part of which is named in the handwriting of Fabricius. 1823 to 1824." The words "but I fear some labels had been misplaced." were added at a later date.

In the Banksian cabinet it can now be seen that the African *Acræa hortæ* stands as one of the group "*Heliconii*," in which are included not only *Acræinæ*, but *Heliconiinæ* and *Ithomiinæ*—in fact, all the subfamilies to which Burchell applied the term "*Horta*" or of which he wrote "belonging to the genus of *P. Hortæ*." The evidence now brought together makes it clear that by "*Horta*" Burchell meant to imply a place in the Fabrician "*Heliconii*," the group headed by *Acræa hortæ*, a species well-known to him before he started,

¹ Ann. & Mag. Nat. Hist. ser. 7, vol. xiii., April 1904, p. 313.

in 1825, on his Brazilian expedition (Fabricius, Syst. Ent., Ins., 1775, p. 459. no. 69).—E. B. P.]

Bz. 2. 3. 29. ♂ = **1316**. Porto Real. (As **1315**.)

The yellow spot is altogether absent.

16. 3. 29. ♂ = **1317**. Porto Real.

A minute trace of the yellow spot.

24. 3. 29. ♂ = **1318**. Porto Real. "Mánga."

The yellow spot distinct.

Bz. + 24. 3. 29. ♂ = **1319**. Porto Real. "Mánga."

The yellow spot minute.

Westwood's list agrees, but the dates will be found included among those of *Hel. erato phyllis* (see **1315** and the paragraph after **1409 A**).

Section II. OPISORHYPARI.

Cohort iv. EGERIFORMES.

Heliconius burneyi burneyi, Hübn.

20. 9. 29. = **1320**. Pará. "S.E. of S. Joze." A Westwood's label reads, "*Heliconia Burneyi*. Hb. Zutr. f. 401. 2." [J. Hübner and C. Geyer's 'Zuträge zur exotischer Schmetterlinge.' Augsburg. 1818-1831.]

Westwood's list agrees. Opposite to the date he wrote, "*Heliconia Burneyi*: al. ant. maculis flav. mediis."

Cohort viii. ANTIOCHIFORMES.

Heliconius antiochus zobeide, Butl.

25. 8. 29. = **1321**. "intra urbem." Pará. S. José.

A Westwood's label reads, "*Heliconia Antiocha* Var. without yellow stripe on median vein and white middle bar broken in centre."

Westwood's list agrees with this label: and the following description is written opposite to the date: "*Heliconia Antiocha* var.: blue black f. w. with 2 white oblique stripes." The white bar referred to in the label is the lower and more median of the two stripes on the fore wing, mentioned in the list.

Heliconius sara sara, F.

(Probably not a Burchell specimen.)

8. 11. 29. = **1322**. Pará. "S. of S. Jozé."

Westwood's list includes this date, but it is almost certain that Burchell's label has here become associated with a

butterfly never taken by this naturalist, having been accidentally transferred from a specimen of *H. sara thamar* which should follow 1346. Mr. W. J. Kaye, who originally determined 1322, has again carefully examined it at our special request. He still believes, and we agree with him, that 1322 did not come from any of the localities visited by Burchell, but from the range of *sara sara*, given by Stichel as Venezuela, Colombia, and Panama (?).

Westwood places the date of 1322 (three examples) in a list which includes, under the name *sara*, both the following subspecies. Of these three examples only one (1346) can now be found. There is no example of *H. sara thamar* without data in the Hope Department which can now be pointed out as likely to have been captured by Burchell; and the specimen which originally bore the Burchell label of 1322 is probably lost.

Heliconius sara apseudes, Hübn.

28. 10. 25. = 1323. Minas Geraes. "In the Forest on the West and on the East side of S. João de Nêpomucéna." (See 1285.)

6. 12. 25. = 1324. Rio de Janeiro. (As 1314.)

7. 3. 26. 2 = 1325, 1326. Rio de Janeiro. "At Catombí."

7. 3. 26. = 1327. "Catombi." Rio de Janeiro.

9. 3. 26. = 1328. Rio de Janeiro.

Bz. 9. 3. 26. = 1329. Rio de Janeiro. The last figure of the year, which is rather like an "8," is shown by examination with a lens to be a "6,"—a conclusion also adopted in Westwood's list, which is in his own handwriting.

Westwood's list records one other specimen of this date.

12. 3. 26. = 1330. Rio de Janeiro. "Aqueduct."

Westwood's list records one other specimen of this date.

16. 3. 26. = 1331. Rio de Janeiro. "In the upper part of the valley of Catombi, and along the road thence to Rio Comprido and Matto Porcos."

Bz. 16. 3. 26. = 1332. Rio de Janeiro. (As 1331.) The last figure of the year is here, as in 1329, somewhat like an "8," but Westwood's and our own examination agree in reading it as a "6."

Bz. 17. 3. 26. = 1333. Rio de Janeiro. "Along the Carioca aqueduct, and descending the high hill (mentioned 31. 1. 26) into the Valley of Catombi. But they were mostly along the aqueduct; and only a few on the hill."

For the data of 31. 1. 26, see 1378.

Bz. 18. 3. 26. = **1334**. Rio de Janeiro. "Along the Carióca aqueduct."

21. 3. 26. = **1335**. Rio de Janeiro. "Along the Carioca Aqueduct."

A Westwood's label reads, "Capt. 28. 10. 25; 6. 12. 25; 7. 3. 26 (3 ind.); 9. 3. 26 (3 ind.); 12. 3. 26 (2 ind.); 16. 3. 26 (2 ind.); 17. 3. 26; 18. 3. 26; 21. 3. 26; 27. 3. 26 (2 ind.); 1. 4. 26; 3. 4. 26 (3 ind.); 28. 10. 27; 29. 7. 29 (2 ind.); 6. 9. 29 (2 ind.); 20. 9. 29; 8. 11. 29 (3 ind.)." Westwood's list agrees with this label.

27. 3. 26. = **1336**. Rio de Janeiro. "From the Village of São Domingos to the island of Boa Viagem." "On the main-land about Fort Boa Viagem." "In a walk from the village of São Domingos to the Island of Boa Viagem and along the shore of the Mainland eastward for about half a mile."* In addition to this, the Cat. pl. Braz. MSS. contains the following more detailed account of the localities in which Burchell collected on this date: (the catalogue numbers of the botanical specimens are here omitted:) "... In the village of São Domingos . . . Between São Domingos and Boa Viagem. . . . Along the shore of the bay; from Boa Viagem eastward to where the high rocky cliffs obstruct the path farther, excepting at low water."*

Bz. 27. 3. 26. = **1337**. Rio de Janeiro. (As **1336**.)

3. 4. 26. 2 = **1338, 1339**. Rio de Janeiro. "Along the Carioca Aqueduct."

Bz. 3. 4. 26. = **1340**. Rio de Janeiro. "Along the Carioca Aqueduct."

Besides the additions above alluded to, Westwood's list and label on **1335** give 1. 4. 26, Rio de Janeiro.

It has already been mentioned (see **1322**) that this form is included with the following subspecies under *Hel. sara* in Westwood's list.

Heliconius sara thamar, Hübn.

Bz. + 28. 10. 27. = **1341**. "Sylv." is on the Bz. label, "in sylva" on the English label. Between Meia Ponte and Goyaz. "S. Joaquim to Sapezál."

Bz. 29. 7. 29. = **1342**. Pará.

Westwood's list records one other specimen of this date.

6. 9. 29. = **1343, 1344**. Pará. "Walk [to] a rocinha near the Nazareth church."

20. 9. 29. = **1345**. Pará. "S.E. of S. Joze."

8. 11. 29. = **1346**. Pará. "S. of S. Jozé."

Westwood's list records two other specimens of this date. It is probable that the label of one of the missing specimens was accidentally transferred at some unknown date to 1322. It may have been so transferred before Westwood's list was written; for 1322, no less than the two subspecies which follow it, would have been formerly identified as *H. sara*.

Except for the above-mentioned discrepancies, Westwood's list agrees. Opposite to the list of dates he wrote the following brief description, which is equally applicable to all three subspecies:—

“*Hel. Sara*: blue black with middle & subap^l. yellow bar in f. w. 30 [individuals].”

Cohort ix. ERATOFORMES.

Heliconius erato amazona, Staud.

19. 5. 29. = 1347. On the Rio Tocantins. “Araguáy.” [S. João da Araguay.] The town of S. Francisco appears in modern maps opposite to the confluence of the R. Araguay with the R. Tocantins.

A Westwood's label reads “*Helic. Vesta?* Cram. pl 119 A.” The “?” has been erased in the same Indian ink as that in which the words are written,—therefore probably by Westwood himself. Plate 119 is in vol. ii. of P. Cramer's ‘*Papillons Exotiques des trois Parties du Monde, l'Asie, l'Afrique, et l'Amerique*. Amsterdam and Utrecht. 1779-1791.’ Cramer's *vesta* is a synonym of several of the subspecies of *erato*, Linn., including *erato amazona*.

It is to be noted that there is on the fore wing of this specimen a yellow spot below the first submedian nervule which is not found on any of the other individuals of this species captured by Burchell. This specimen is also peculiar in that the outer part of the red area below the cell of the fore wing upper surface bears a white V-shaped mark, more strongly developed on the right side.

20. 6. 29. = 1348. Pará.

This date is omitted from Westwood's list and from his label on 1352, but appears under *Eueides tales pythagoras* (see 1437).

1. 7. 29. 2 = 1349, 1350. Pará. “Walk to the Caza de Pao.”

In the case of both 1349 and 1350, Westwood had removed and mounted on a card, affixed to the pin, one of the anterior legs. A Westwood's label on 1350 reads “*Heliconia Vesta*.”

7. 7. 29. = **1351**. Pará. "Eastward of my house." The yellow spot at the apical end of the fore wing cell is divided into two in this specimen.

Westwood's list and label record one other specimen of this date.

29. 7. 29. = **1352**. Pará.

A Westwood's label reads "Capt. 19. 5. 29; 1. 7. 29, 2 ind^s.; 7. 7. 29, 2 ind^s.; 8. 7. 29; 29. 7. 29; 1. 8. 29; 15. 11. 29; 1. 2. 30." Westwood's list agrees.

Bz. + 1. 8. 29. = **1353**. Pará.

15. 11. 29. = **1354**. Pará. S. José. "Caminho de Chamonte."

1. 2. 30. = **1355**. "At Pará. In the forest S.S.E. of S. Jozé." The yellow spot at the apical end of the fore wing cell is here, as in **1351**, divided into two, and the costal member of the pair is only vestigial.

Besides the addition above alluded to, Westwood's list and label give 8. 7. 29, Pará. It is possible that he here accidentally includes the date on **1442**, a specimen of *Euclides tales pythagoras*, omitted from his list of this latter species (see **1442**). Opposite to the list of dates he wrote "*Heliconia Vesta*. Al. ant. mac. flava obliqua ♂ & ♀"—and he made a diagram showing that he referred to the oblique yellow spot between the first and second median nervules. In the same place he thus describes the variation in size of the spot in the cell of the fore wing:—"variat. magn. mac^s. flavæ in cellula al. ant."

Heliconius erato phyllis, F.

Bz. 147. II. [16. 8. 25.] = **1356**. Rio de Janeiro. "*Papilio*." "In a walk along the Aqueduct. Mile and a half above the Convent of Santa Theresa, at Rio de Janeiro—in Brazil."* Less detailed data have hitherto been given from the Brazilian note-book; it should be noted, however, that the latter reads: "129-151. Above the Theresa Convent; and on the woody hilly [hills] along the Aqueduct."

Westwood's list records two specimens bearing the number 147.

Bz. 316. I. [14. 10. 25.] = **1357**. Minas Geraes. "*Papilio*." Burchell notes that at 7.10 P.M. on this day he "arr.[ived] at Discoberto do Senora do Antonio Velho." "I killed a reddish snake and preserved it. V. J.¹"*

¹ Burchell's Brazilian Journal has unfortunately never been found. "V. J." stands for "Vide Journal."

(See 1284). He remained here till 27. 10. 25, when we find in his Cat. pl. Braz. "Leave Discoberto and arrive at S. Jao de Nepomucena."*

Bz. 357. I. [15. 10. 25.] = 1358. Minas Geraes. "*Papil[io]*. At the Discobérto do Antonio Velho." (See 1284.)

Bz. 562. I. [19. 10. 25.] = 1359. Minas Geraes. "*Pap[ilio]*." "At Descobérto do Rio Novo."* This is the "Discoberto do Antonio Velho" of the Brazilian notebook. (See 1284.)

Opposite "562" Burchell wrote "(147)," indicating his conclusion that both numbers were affixed to specimens of the same species.

Bz. + 853. I. 24. 10. 25. = 1360. Date as well as number on English label. Minas Geraes. "*Pap[ilio]*. About João Pedro's, at Discoberto: at the margin of the forest." (See 1284.)

Westwood's list refers to this specimen by its date alone.

29. 10. 25. = 1361. Minas Geraes. (As 1285.)

30. 10. 25. = 1362. Minas Geraes. "(In the forest). On the N.E. side of the arraial of São João de Nepomucena." (See 1285.)

6. 11. 25. 2 = 1363, 1364. Minas Geraes. "At Capt. Amáro Leite's."* (See 1286.)

7. 11. 25. 2 = 1365, 1366. Minas Geraes. (As 1286; and see 1285.)

Westwood's list records one other specimen of this date.

6. 12. 25. 2 = 1367, 1368. Rio de Janeiro. (As 1314.)

Westwood's list includes three specimens with this date. The third is of course an example of *Hel. nanna* (1314.)

24. 12. 25. = 1369. Rio de Janeiro. "Aqueduct (on the first hill on the left)." The following full account of Burchell's movements on this date is given in the Cat. pl. Braz. MSS. 701-3461:—"Along the Aqueduct. Mostly on the first hill on the left, or S.E. side of the aqueduct . . . ; and in the thick woods, . . . on the same hill, quitting the aqueduct by the first opening or valley just above the stone quarry. Above the stone quarry . . ."* (The dotted lines represent the omitted catalogue numbers of Burchell's botanical specimens.)

29. 12. 25. 2 = 1370, 1371. Rio de Janeiro. "Catombí—Barra Vermelha—and Rio Comprido." "On a hill westward of Catombí, along a road turning southward out of the main road at Barra Vermelha to the Fazenda da Ladeira . . . and further along the main road to Rio Comprido . . ."* (The dotted lines represent the omitted catalogue numbers of Burchell's botanical specimens.)

10. 1. 26. = **1372**. Rio de Janeiro. "At Praia Grande and vicinity, and about S. João de Carahý." "In a walk from Praia-Grande to the Village of São João de Carahý and 2 miles further." * He also speaks of "the level inundated country beyond São João" *; and "along the road beyond the last mentioned level." *

Bz. + 11. 1. 26. = **1373**. Rio de Janeiro. "At Laranjeiros."

Westwood's list records one other specimen of this date.

14. 1. 26. 2 = **1374, 1375**. "Laranjeiros." on both labels. Rio de Janeiro. "Brought from and collected in the Valley of Laranjeiros. Omnia insuper plantas."

14. 1. 26. 2 = **1376, 1377**. Rio de Janeiro. (As **1374**.)

Westwood's list records one other specimen of this date.

31. 1. 26. 2 = **1378, 1379**. Rio de Janeiro. "Valley of Catombý and a high Mountain on the N.W. side of the Aqueduct." "All of this date were from off plants: mostly up the Valley of Catumbi." "Along the Valley of Catumbi and ascending a high Mountain on the N.W. side of the Aqueduct of Carióca." *

In addition to this, the Cat. pl. Braz. MSS. 701-3461 contains the following more detailed account of the localities in which Burchell collected on this date (the catalogue numbers of the botanical specimens are omitted, as indicated by the dotted lines):—" . . . In the Lower part of the valley, as far as the last houses . . . Along the Catumbi Aqueduct, to the head of the valley where it crosses it by a high wooden trough . . . In the ascent, from the head of the valley of Catumbi, up the high Mountain on the N.W. side of the aqueduct of Carióca . . . Along the Aqueduct of Carióca." *

Westwood's list records one other specimen of this date.

Bz. + 31. 1. 26. = **1380**. Rio de Janeiro. (As **1378**.)

9. 2. 26. = **1381**. Organ Mtns. "By the River Pacaqué (near Mr. March's Dwelling House)." *

12. 2. 26. = **1382**. Organ Mtns.

7. 3. 26. 2 = **1383, 1384**. Rio de Janeiro. "At Catombi."

Bz. 7. 3. 26. = **1385**. Rio de Janeiro. "At Catombi."

9. 3. 26. 3 = **1386, 1387, 1388**. Rio de Janeiro.

Bz. 9. 3. 26. 2 = **1389, 1390**. Rio de Janeiro.

10. 3. 26. 5 = **1391-1395**. Rio de Janeiro.

A Westwood's label on **1395** reads, "69 individuals in full of this species without any variation of the least importance taken betⁿ. 24. 10. 25 & 24. 3. 29. See list in my Burchell Catalogue." Westwood's list agrees with this label. It has already been pointed out that Westwood was here including two very different species. (See **1315**.)

Bz. 10. 3. 26. = 1396. Rio de Janeiro.

12. 3. 26. 2 = 1397, 1398. Rio de Janeiro. "Aqueduct."

Westwood's list records one other specimen of this date.

12. 3. 26. = 1399. "Carioca Aqueduct." Rio de Janeiro.

15. 3. 26. = 1400. Rio de Janeiro. "Catumbi, in plantis."

Bz. 17. 3. 26. = 1401. Rio de Janeiro. (Carioca aqueduct.
(As 1333.)

18. 3. 26. = 1402. Rio de Janeiro. "Along the Carióca aqueduct."

20. 3. 26. = 1403. Rio de Janeiro. "Along the Carioca Aqueduct."

21. 3. 26. = 1404. Rio de Janeiro. "Along the Carioca Aqueduct."

Bz. 21. 3. 26. = 1405. Rio de Janeiro. "Along the Carioca Aqueduct."

22. 3. 26. = 1406. Rio de Janeiro. "Along the [Carioca] Aqueduct, nearly as far as its commencement at the head of the valley of Laranjeiros."* The latter word is usually spelled "Laranjeiros" by Burchell.

Bz. 1. 4. 26. = 1407. Rio de Janeiro. "In the valley of Catumbi."

Westwood's list records one other specimen of this date.

Bz. 19. 9. 26. = 1408. Santos.

Bz. 30. 4. 28. = 1409. Goyaz.

—————. = 1409 A. This is probably a Burchell specimen which has lost its label; for it has precisely that appearance of age which is a characteristic of many Burchell specimens, but of no other example of this species in the Hope Department. The label appears to have been lost since Westwood's list was prepared, for no mention is there made of a specimen without data. The missing date may have been that of any one of the additional specimens of *II. erato phyllis* to be inferred from his list.

Besides the additional specimens already mentioned, and the six examples of *Hel. nanna* (1314-1319), Westwood's list includes the dates 3. 4. 26 (Rio de Janeiro) and 5. 2. 28 (Goyaz), which have not been found on any specimen. They probably indicate the former existence of two additional examples of *Hel. erato phyllis*.

Opposite to the list of dates Westwood wrote:—" *Hel. Phyllis*. 69 ind^s."

2. Genus. *EUEIDES*, Hübn.

Section II. BRACHYSCENÆ.

Cohort ii. VIBILIFORMES.

Eueides vibilia vibilia, Godt.

20. 3. 26. ♂ = 1410. Rio de Janeiro. "Along the Carioca Aqueduct."

Westwood's "Catal. A. 1" is on specimen, and on another label "*Meraui Eueides*." Westwood's list agrees with these labels. Hübner's *Colanis mereaui* is a synonym of *Eueides vibilia*, Godt.

22. 3. 26. b. ♀ = 1411. Rio de Janeiro. "Along the Carioca Aqueduct." The Brazilian note-book also adds: "Those marked *b* were purchased from some negro-insect-catchers, who caught them all in this spot and almost all were alive when I bought them." (See also 1406.)

Westwood's "Cat. A. 3" is on specimen, and on another label "*Eueides Vibilia*." Westwood's list agrees with these labels.

19. 3. 29. ♂ = 1412. Porto Real.

23. 3. 29. ♂ = 1413. Porto Real.

25. 3. 29. ♂ = 1414. Porto Real.

Westwood's "A. 1." (clerk's MSS.) is on specimen. Westwood's list agrees.

28. 3. 29. 2 ♂ ♀ = 1415, 1416. Porto Real.

Westwood's "A. 4." (clerk's MSS.) is on the ♂ (1415), —probably as the result of accidental transposition during manipulation. This number, in the list of "Burchell's *Acræa* &c.," stands for the mimetic Pierine butterfly "*Leptalis [Dismorphia] Astynome*." In the list itself the date 28. 3. 29 appears correctly under A. 1. and A. 3., and not under A. 4.

5. 4. 29. ♂ = 1417. Porto Real.

Bz. + 5. 4. 29. ♂ = 1418. Porto Real.

Westwood's list, A. 1. and A. 3., agrees. Opposite to the dates of the seven males, placed under A. 1., he wrote "*Euides Meraui*"; while underneath 20. 3. 26 "*Meraui Eueides*" appears in clerk's MSS. Similarly, opposite to the dates of the two females (22. 3. 26 *b* and 28. 3. 29, under A. 3.) Westwood wrote "*Euides Vibitia*." It is to be observed that Westwood omitted the second "e" of "*Eueides*" from his list of "*Acræa* &c.," but not from his labels.

Eucides pavana, Mén.

9. 2. 26. ♀ = **1419**. Organ Mtns. (As **1381**.) Westwood's "Cat. A. 2." is on specimen, and on another label "*Eucides Pavana*."

Westwood's list agrees. Opposite to the date he wrote "*Eucides Pavana*"; while under it "*Eucides* [sic] *pavana*" is written in clerk's MSS.

Cohort iii. LYBIFORMES.

Eucides aliphera aliphera, Godt.

28. 10. 25. = **1420**. Minas Geraes. (As **1323**, and see **1285**.)

30. 10. 25. = **1421**. Minas Geraes. (As **1362**, and see **1285**.)

p. 25. 2. 26. = **1422**. Organ Mtns. "Along the road between Frechal (under the Serra dos Orgãos) and the Town of Magé (excepting the 6 miles (English) of the latter part of the road). The whole of this road is in general, over a level low country, and the soil mostly of a sandy quality."*

20. 3. 26. = **1423**. Rio de Janeiro. "Along the Carioca Aqueduct."

22. 3. 26. = **1424**. Rio de Janeiro. (As **1406**.) Westwood's "A. 17." is on specimen.

Westwood's list agrees with this label.

Bz. 22. 3. 26. = **1425**. Rio de Janeiro. (As **1406**.)

Bz. 29. 1. 29. = **1426**. Porto Real. "Caught on the bank of the Tucantins, while measuring the base line."

This specimen is unrecorded in Westwood's list.

Bz. 16. 2. 29. = **1427**. Porto Real. "Papiliones (3) caught on the flowers of a Malva in the backyard." (See also **660** and **1193**.)

Bz. 19. 2. 29. = **1428**. Porto Real.

Bz. 2. 3. 29. = **1429**. Porto Real.

Westwood's list records one other specimen of this date.

10. 3. 29. = **1430**. Porto Real. "Lepidoptera began to appear more numerous in the end of Feb'y., and since the beginning of this month they appear abundant."

17. 3. 29. = **1431**. Porto Real.

23. 3. 29. 2 = **1432, 1433**. Porto Real.

Westwood's list records one other specimen of this date.

5. 4. 29. = **1434**. Porto Real.

Besides the discrepancies above alluded to, Westwood's list includes an additional specimen with the date 21. 3. 26

(Rio de Janeiro). The data of this species not only appear as A. 17. in Westwood's "*Acræa* &c.," but also separately on a small slip of paper. In the first of these lists (only including four of the dates of *E. aliphera*) Westwood wrote the following description in reference to and opposite A. 16. (*Colænis julia*):—"Cethosia? orange red, with oblique brown bar in f. w."; while opposite to A. 17. (the species with which we are concerned) he wrote "d° smaller." The second list, on the other hand, which is altogether in Westwood's writing, and almost perfect, bears the heading "Small narrow winged *Colænis*."

As bearing upon Westwood's use of "*Cethosia*" and his inclusion of *Eueides* in the list of "*Acræa* &c.," it must be remembered that, in 1819, *vibilia*, *aliphera*, and *lybia* were placed in *Cethosia*, and *vibilia* and *aliphera* in *Acræa* (Godt. and Latr. Enc. méth. Zool., vol. ix. pp. 245 and 806).

Eueides lybia lybia, F.

7. 6. 29. = 1435. "S^{ta}. Anna." On the Rio Tocantins, just above (S.W. of) Pará. Westwood's "A. 18." (clerk's MSS.) is on specimen.

Westwood's list agrees with this label. The date of this species not only appears as A. 18. in Westwood's "*Acræa* &c.," but also separately on a small slip of paper. In the first of these lists he distinguished this species from the preceding (A. 17.) by writing opposite to its date: "d° smaller with broader wings & dark marks." The repeated date, written by Westwood himself, appears on the slip which bears the dates of *Eueides aliphera*. Below these he wrote "7. 6. 29" under the heading "small sp^s. d°." Like ditto but with broader wings fulv^s. with black margin."

Cohort V. THALETOFORMES¹.

Eueides tales pythagoras, Kirby.

18. 6. 29. ♀ = 1436. Pará.

A Westwood's label reads "*Thales* Var. ? alt. Sexes?," and another "Var. Costa al. ant. basi fulva. al-p. radiis, rufis major^s." By the first of these labels Westwood evidently doubted whether the peculiarities of pattern described in the second label were those of a variety or of sex. This interpretation is confirmed by his list, in which the words "Var.

¹ The number should be "iv.," for no other cohort intervenes in Stichel's classification between "iii. *Lybiiformes*" and "v. *Thaletoformes*."

vel ♀" appear over "18. 6. 29," and are encircled by a line which also includes this date. It is somewhat strange that he makes no reference, on either specimen or list, to the similar pattern of 1441—the other female of this species captured by Burchell.

20. 6. 29. ♂ = 1437. Pará.

Westwood's list and label on 1440 record one other specimen of this date. It seems probable that he here accidentally includes the date on 1348, a specimen of *H. erato amazona* omitted from his list of this latter species.

Bz. + 26. 6. 29. ♂ = 1438. "Pará, near my house (Pombo roçinha)."

26. 6. 29. 2 ♂ = 1439, 1440. "Pará, near my house (Pombo roçinha)."

A Westwood's label on 1439 reads "*Thales (Eueides)*," and one on 1440, "Capt. 18. 6. 29; 20. 6. 29 (2 ind^s.); 26. 6. 29 (3 ind^s.); 1. 7. 29; 4. 7. 29." Westwood's list agrees with this label. 4. 7. 29 is not found on any existing Burchell specimen of this species.

1. 7. 29. ♀ = 1441. Pará. "Walk to the Caza de Pao."

Bz. + 8. 7. 29. ♂ = 1442. Pará.

This date is omitted from Westwood's list and from his label on 1440, but is given for *Hel. erato amazona*, although borne by no existing Burchell specimen of that species. It is possible that there has here been an accidental transposition of specimens by Westwood himself, or of labels at some later date. Another interpretation would be that "4. 7. 29" of his list and label is an erroneous rendering of "8. 7. 29." In either case the locality is Pará.

Westwood evidently at first mistook this species for a true *Heliconius*, and placed it, not in the list of "*Acreea* &c.," but in that of "*Heliconide*" next to the three species to which it bears a strong superficial resemblance, viz. *H. burneyi*, *H. erato amazona*, and *H. melpomene thelxiope*. Furthermore, he entered "7. 6. 29" among the dates of the *Eueides*, but indicated by means of a line that it really belonged to "*thelxiope*." These facts increase the probability that an accidental transference of the date of 1442 to the list of *erato amazona* has taken place.

Westwood's list agrees, except for the discrepancies above alluded to. Opposite to the list of dates he wrote, "*Eueides Thales*. Alis post^o. rufo-radiatis. Subtus al. post. maculis marg. albis."